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ABSTRACT

The Administrative Stress Index, a 35-item questionnaire, was designed, validated, and sent to members of the Confederation of Oregon School Administrators to identify perceived job stress, to establish stress categories, and to discover how administrators cope with stress. Usable responses were received from 1,156 elementary and secondary principals, superintendents, and central office administrators. The typical subject was male, 42 years old, had 9 years of administrative experience, and worked 55 hours per week. Varimax rotation of the data revealed four interpretable dimensions of stress: role-based stress, task-based stress, boundary-spanning stress (arising from relating the school to the external environment), and conflict-mediating stress. Relationships were found between these dimensions and such personal characteristics as age, tenure, and health. Contrary to previous research findings, some stress factors were observed to increase with age and tenure. The data also suggested that despite similarities between their jobs, principals and superintendents experienced widely different degrees of stress. Coping activities fell into three categories: physical activity, mental control, and management skill development. The research indicated previous studies have not been comprehensive enough and that further study is needed. (Author/PGD)

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WHAT STRESSES SCHOOL ADMINISTRATORS -- AND HOW THEY COPE

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WHAT STRESSES SCHOOL ADMINISTRATORS--
AND HOW THEY COPE

Background

Research conducted during recent years has produced a growing body of evidence that occupational stress adversely affects the productivity, performance, job satisfaction, and health of professionals (Burke, 1971; Buck, 1972, Swent and Gmelch, 1977; and Howard, et al., 1978). Those in the people-related professions seem to be more susceptiable to this phenomenon than persons in other occupations. This fact is verified by studies of police (Kroes and Hurrell, 1978), administrators (Gmelch, 1977, 1980), teachers (Schwab and Iwanicki, 1982), dentists (Howard, et al., 1978) and other professionals.

While stress permeates individuals' lives in numerous environments (family, social, work), of particular interest in this study is the work environment. Buck (1972) concludes the job environment is central in the experience of stress. Swent and Gmelch (1977) found that administrators estimated that 75 percent of the stress in their lives came from their jobs.

In addition to specific occupational stressors, social-psychological stress research indicates a plethora of analytically independent sources of occupational stress, implying its multidimensionality. McGrath hypothesizes that there are six possible sources of stress in an organizational setting: task-based stress, role-based stress, stress intrinsic to the behavior setting, stress arising from the physical environment, stress arising from the social environment, and stress within the persons system (McGrath, 1976, p. 1369).

Some of the sources hypothesized by McGrath (1976) have been explored by other researchers in the area of occupational stress. Guetzkow and Gyr (1954), Gullahorn (1956), Morris (1957), Nix and Bates (1962), Eckerman (1964), Morris and Koch (1979) and others have shown that a number of work conditions, such as task difficulty, work overload, role ambiguity, etc., can contribute to the level of subjectively experienced social-psychological stress. However, most measures of social-psychological stress available to date fail to reflect this multi-dimensionality. This study sought to develop an instrument that would measure the diverse sources of occupational stress which arise within complex administrative roles. Moreover, previous research has shown that levels of subjectively experienced social-psychological stress are strongly associated with physical health (Russek and Zohman, 1958; Kornhauser, 1965; French and Caplan, 1973; Wardell, French, Cobb, Caplan, Van Harrison and Pinneau, 1976; Cooper and Marshall, 1976; Cooper and Payne, 1978).

Research conducted on responses to stress basically examines two categories of reactions: psychological and physiological. While each response is distinct in itself, they also indirectly relate to one another. The psychological response ranges from annoyance to rage, amusement to ecstacy. Physiological reactions to stress can be no more than an increased heart beat, but even this can be a contributing factor to coronary heart disease.

Since physical reactions have received most attention in studies and from scientists, this study investigated how people respond psychologically (encompassing both emotional and behavioral reactions) in an exploratory manner in order to identify the repertoire of administrative coping techniques. The rationale for such an approach is

founded in research which concludes that those individuals who cope best have a variety of techniques to call upon when under stress.

Problem and Objectives

Based on these and other findings the following is asserted: (1) stress affects all people and to a greater extent those in people-related professions; (2) general measures of social-psychological job stress underestimate and obscure specific sources of occupational stress unique to certain professions; and (3) perceptions of job-related stress is the first critical step in identifying and reducing excessive stress.

The present study sought to fulfill four main objectives:

(1) Identify job situations perceived to be stressful by public school administrators.

(2) Group these stressful job situations into interpretable clusters.

(3) Investigate the relationship between perceived stress and personal characteristics such as age, sex, and years of administrative experience; and

(4) Identify ways administrators cope with stress.

Since confusion abounds in the literature and in common usage of stress and its related terms, clarification and elaboration of some key terms used in this study follow to provide a basic understanding of the concepts.

Perceived Job Stress

This study subscribes to French et al.'s (1976, p. 3) definition of stress: "any characteristic of the job environment which poses a threat to the individual--either excessive demands or insufficient supplies to meet his [her] needs." Furthermore, the threat mentioned in the identification of French et al.'s definition will be limited to that

which is perceived. As Wolff (1953, p. 133) states, "the stress accruing from a situation is based in large part on the way the affected subject perceives it."

Stress Coping Behaviors, Techniques, and Strategies. As perceived levels of stress increase, individuals respond by using adaptive behaviors (Manderschied, Silbergeld, and Dager, 1975). These behaviors, whether positive or negative, are considered stress coping behaviors. A coping technique, however, implies a planned or learned response to resolve a stressful situation. In this study, a coping strategy is defined as a decision process by which individuals select the most effective technique or series of techniques to reduce stress. The desired outcome of coping strategies would be to reduce stress barriers, thus facilitating individuals' professional development.

Personal Characteristics. Several characteristics of workers have been shown to be related to stress. Of particular interest in this study are age, position, and years of administrative experience. Research has supported the relationship between these characteristics and stress. Stouffer et al. (1949), Gurin et al. (1960), Langner (1962), and Indik et al. (1964) found significant relationships between age and the amount of stress experienced. The findings on sex and perceived stress are less conclusive. Some studies examined different levels of perceived stress between males and females, but the males were typically employed in significantly different positions than were females (Indik et al., 1964; Kahn et al., 1964; Burke and Weir, 1976). Several researchers (Farber and Spence, 1957; Pronko and Leith, 1956; Ulrich, 1957; Berikun et al., 1962; McGrath, 1970) have shown that past experience, either by virtue of familiarity with situations or training, significantly

alters the level of stress experienced. Unfortunately, most of the studies cited here have involved composite samples of diverse occupational groups, thus making it difficult to separate the influence of personal characteristics from other contextual factors. The present study partially alleviates this problem by essentially controlling for occupational setting.

Methodology

Instrument Development

The questionnaire developed to measure sources of administrative stress evolved through a series of iterations designed to insure that all relevant facets of job-related strain were explored. The fifteen-item index of Job-Related Strain (Indik, Seashore, and Slesinger, 1964) comprised the initial questionnaire core.[1] This index was supplemented by items suggested from a review of current publications for public school administrators, and by items suggested from stress logs which were kept by forty school administrators for a period of one week. Those participating in this initial phase of item development were asked by researchers to keep a diary of work-related stress. On a daily basis they reported: (1) the most stressful single incident occurring that day; and, (2) the most stressful series of related incidents (e.g., recurring telephone interruptions, pending grievances, parent-teacher conflicts, etc.). At the end of the week, they were asked to identify other sources of stress that might not have occurred during the week in which stress logs were kept.

The pilot instrument was field tested for content validity and clarity with a group of 25 practicing administrators. After revision and a second pilot test (n=20) the final Administrative Stress Index (ASI)

comprised 35 items with the following five point Likert-type response categories: "rarely or never bothers me" (coded 1); "occasionally bothers me" (coded 3); and, "frequently bothers me" (coded 5). In response format, the ASI conformed with the JRS (Indik, et al, 1964), and 12 of its items were refined from the JRS.

The 23 items developed from stress logs and reviews of current public school administrator publications appeared to tap sources of stress which are unique to administrative roles in general, and the roles of public school administrators in particular. Thus, it was hoped that the ASI would permit a more comprehensive assessment of stress in this particular population than would be permitted by the use of generic instruments such as the JRS.

Demographic questions asking administrators for their age, position, years of experience and so on followed the 35 stress items. In addition administrators were asked in an open ended question to list techniques or ways they had found useful in handling their job pressures.

Sample

To maximize internal validity of the instrument, the questionnaire was developed specifically for use on a homogeneous population, namely administrators of educational institutions. Although the sample included vice-principals, principals, superintendents and central office administrators, all these positions involve administrative functions. All subjects belonged to the Confederation of Oregon School Administrators (n = 1855). These included vice-principals, principals, superintendents, and central office administrators. Every person within this population was sent a questionnaire together with a letter explaining the purpose of the study and a return envelope. Out of 1855 mailed questionnaires, 1207 were returned. Of these, 1156 usable surveys were obtained for a net response rate of 62.3 percent.

The average subject was 42 years old and had 9 years of administrative experience; 91 percent were male; 354 were elementary principals, 397 were junior or senior high school administrators, 151 were superintendents, and 254 were central office administrators. The median hours worked per subject was 55, and the median percent of total life stress attributed to work was 75 percent.

Analysis Method

The 36 stressors comprising the Administrative Stress Index portion of the questionnaire was subject to principal components Varimax rotation. The use of orthogonal rotation was based upon the assumption that the broad ranging scale developed here permits subjects to report sources of strain differentially as between its various components. This assumption was checked by examining conventional criteria for the extracted factors.

To strengthen psychometric evidence, the total sample was divided into validation and cross-validation samples. Due to the uneven number of subjects in each of the different administrative job categories it was decided that the best strategy for cross-validation was to split the sample into equal halves of 578 each, on a random basis.

Before splitting the sample, a preliminary principle components analysis of the ASI was conducted to identify those items which failed to load singularly on a particular orthogonal factor. Ten such items were identified. Consistent with the objective of identifying orothogonal factors, only the remaining 25 items were used in subsequent analyses of the validation and cross-validation samples.

Demographic variables were used to divide the sample into subset categories. Mean scores and analysis of variance were calculated to check for differences according to age, administrative position, and administrative experience. Finally, content analysis was used to analyze the techniques administrators identified as useful for coping with stress. Approximately 77% of the administrators responded to this question identifying over 2,500 coping responses.

Results

The Varimax rotated factor matrix for the validation sample (n=578) is presented in Table 1. This analysis indicates that the Administrative Stress Index clusters around four interpretable dimensions.

Factor 1, accounting for 50 percent of the common variance, appears to be very similar to the Indik et al's (1964) JRS index. Six of the 7 items comprising this factor were taken from the JRS index. These items pertain to the administrator's role set interactions and beliefs or attitudes about his/her role in the organization. Consistent with its original interpretation, this factor was labeled role-based stress.

Factor 2, accounting for 22 percent of common variance, appears to tap task-based stress or stress arising from the performance of one's day-to-day administrative tasks. In general, this dimension is comprised of coordination and communication activities which may place extreme time demands upon the administrator. As a set, these items tend to connote activities per se and not role or social-interpersonally based stress. Eight out of 10 items for this dimension evolved out of subject participation in pilot phases of the instrument design (stress logs) and/or through content analysis of relevant occupational literature.

Factor 3, explaining 16 percent of the common variance, clearly reflects boundary-spanning stress. Sources of boundary-spanning stress

arise from the administrators' activities in relating the school to the external environment such as collective bargaining, dealing with regulator agencies and gaining public support for school budgets. These items were also developed especially for the present study.

Factor 4, accounting for 12 percent of common variance, appears to represent conflict-mediating stress indigenous to the public school setting (e.g., resolving parent/school conflicts, etc.). Items in this factor were all developed in pilot phases of the instrument design.

Cross-validation results are presented in Table 2. The factor patterns obtained in this "hold-out" sample are fairly consistent with those obtained in the validation sample, except that in the cross-validation sample factors 3 and 4 are interchanged.

To provide further evidence of the multi-dimensionality of the ASI, coefficient alphas and factor correlations were calculated for the validation and cross-validation samples. These are presented in Table 3. Coefficients of internal consistency are all .70 or higher. The greatest amount of shared variance between any two factors is 14 percent (in the cross-validation sample, Factor 1 x Factor 2, $r = .38$, $r^2 = .14$), indicating that the factors are fairly independent of each other. In addition the median item correlations within factors is two and one-half times the between factor item correlations. These data, together with those presented in Tables 1 and 2 provide good empirical support for conceptualizing administrative stress as a multi-dimensional construct. In this regard, they are consistent with recent theoretical treatments of occupational stress (e.g., McGrath, 1976; Cooper, 1979).

Demographic Variables

While prior research has suggested that stress declines with age and experience (e.g., McGrath, 1976; Indik et al, 1964), the data in Table 4 suggest a more complex perspective on this process. Although

task-based stress declines with age, there was no concurrent decline in role-based stress or conflict mediating stress (the latter does drop significantly after age 50, though). Futhermore, it was discovered that boundary-spanning stress actually increases with age, a factor which probably reflects growing instutional responsibilities in later career stages. Thus, nominal declines in task-based stress appear to be offset by increases in boundary-spanning stress.

As expected, results based upon years of administrative experience are similar to those for age. Respondents with 16-plus years of experience are less bothered by conflict-mediating and task-based sources of stress than less experienced administrators. Early experience (years 1-15), however, is not significantly associated with reduced stress. By contrast, boundary-spanning stress increases significantly for each advanced experience group.

The stress picture for principals and superintendents is characterized by contrasts. Principals experience significantly greater role-based, conflict-mediating, and task-based stress; while superintendents report greater boundary-spanning stress. The contrasts are especially sharp with respect to Factors 4 and 3. Conflict-mediation is markedly more salient to principals, while dealing with environmental constraints (boundary-spanning stress) is of greatest salience to superintendents. Together these findings indicate that relatively small differences in occupation or job characteristics (stimulus conditions) may generate significant differences in stress patterns.

Finally, an overall examination of Table 4 indicates that public school administrators are more likely to be bothered by Factors 2, 3 and 4 than role-based stress. Since the items which comprise these three dimensions evolved out of administrator participation in instrument construction, this provides good support for use of similar procedures

in identifying salient stress sources among various occupational groups. It also suggests that general measures, such as the JRS, are not capable of identifying and measuring the variety and magnitude of job-related stressors experienced by school administrators.

Stress and Physical Health

Previous research has shown that the level of subjectively experienced social-psychological stress is strongly associated with the respondent's physical health (Russek and Zohman, 1958; Kornhauser, 1965; Wardell, Hyman and Hahnson, 1970; French and Chaplan, 1973; French, Cobb, Van Harrison and Pinneau, 1976; Cooper and Marshall, 1976; Cooper and Payne, 1978). Table 5 examines the relationship between the four dimensions of stress and self reports of general physical health. Each stress dimension is strongly and significantly associated with reports of poorer physical health. However, the self report nature of this physical health measure may inflate the actual magnitude of relationships.

In addition to indicating the state of their current physical health, administrators were also asked to identify what percentage of their total life stress results from work. More than 60% reported that at least 70% of their total life stress resulted from their jobs. Given the fairly high percentage of total life stress attributed to work, we would expect stress arising from the performance of one's job to have a significant impact on one's physical health.

Coping Responses

Previous analysis has primarily dealt with the sources of perceived stress. To complete administrators' perception of the problem, content analysis was conducted on the over 2,500 techniques or strategies administrators identified as useful in coping with stress. Although techniques for coping can be thought of as individualistic and not

necessarily helpful to everyone, three general areas or categories of coping emerged: (1) physical activity, (2) mental control, and (3) management skill development. Each is reviewed in more detail below with a sampling of the techniques.

1. Physical Activity. More than 50% of the administrators alleviated their stress by engaging in some sort of physical activity. These activities fell into three specific areas: (1) physical work or exercise (typical techniques included jogging, competing in athletic activities, chopping wood, sex, general exercise programs, working on a farm, strolling in the woods, gardening); (2) separation from work (isolating themselves in their office or home, having a retreat in the mountains, traveling to the coast or to the mountains) and (3) relaxation activities (yoga, meditation, and restful hobbies).
2. Mental Control. Approximately 40% of the administrators used some type of mental defense against tension, whether it be positive attitudes or supportive philosophies of life, such as approaching all problems with an optimistic attitude, taking time off for quiet meditation, sharing problems with colleagues, spouses, and other family members, establishing realistic goals, and maintaining a sense of humor.
3. Management Skill Development. The last category, management skill development, proved rather perplexing. Compared to the other two strategies, administrators did not call upon their management expertise as frequently, for less than 10 percent of administrators mentioned management techniques. However, those management skills singled out as aiding stress reduction were time management, conflict management, good personnel practices (i.e., hiring competent people), team management, developing good human relations, and effective use of superiors as a resource, subordinates for delegation, and colleagues for collaborative problem solving.

Conclusion and Discussion

The results of this study suggest that the ASI is a significant improvement over the JRS as a measure of stress among administrators. The latter index was only able to tap generic role-based stress (Indik, et al., 1964; Burke and Belcourt, 1974), whereas a general consensus exists among researchers that stress is a multi-dimensional construct.

Principal components analysis of the ASI revealed four interpretable factors. Three of these four dimensions were consistent with McGrath's theoretically derived model of occupational stress (1976). These were task-based stress, role-based stress and conflict-mediating stress. These three dimensions may be general or universal to all occupational settings. The fourth factor or dimension of stress extracted in this study (boundary-spanning stress) appears to be job-specific and may be peculiar to public school. These findings suggest that general measures, such as the JRS, would greatly underestimate the sources of occupational stress experienced by administrators.

In measuring stress and stress responses, one needs to make considered judgments about the relative merits of measuring general (universal) dimensions of stress, at some loss of discrimination among the jobs persons studied, and the merits of seeking maximum discrimination, at some loss of comparability and generality. As Campbell and Stanley (1968) pointed out, it is very difficult if not impossible, to maximize both the internal and external validities of a particular instrument and research design. In this study, we have chosen to maximize internal validity. Since the ASI was developed specifically for use on school administrators, in order to be applicable to subjects employed in other contexts many ASI items would have to be modified and adapted to the unique social and cognitive realities of other work populations.

These findings indicate that involving subject groups in instrument design may greatly add to our ability to discriminate sources of stress for various occupational groups. Future efforts might experiment with applications of Delphi procedures in the design of contextually-rooted instruments. Hopefully, through such participative procedures researchers will gain a fuller appreciation of the phenomenological dimensions of particular occupational groups and organizational settings.

This study also related stress to certain personal characteristics and contextual variables. Findings in this area were consistent with previous research in that relationships were found to exist between these two sets of variables. However, while previous research indicates that increased age and tenure were associated with decreases in global stress measures, when the present study decomposed stress into various dimensions it was found that certain dimensions of stress may actually increase with age and tenure while other stressors decline in salience. As has been shown, it would be inaccurate to use scales that merely measure generic work stress and then state the stress increases or decreases over various life and career stages. Rather, it would be important to state specifically which components of occupational stress actually increase or decrease with age and career tenure.

Also the findings with respect to the relationships between different dimensions of stress and position indicate that even though the jobs of principals and superintendents are similar (i.e., they involve administrative functions in a school setting), the relatively small differences which exist between these jobs result in fairly significant differences in stress patterns. Consequently, researchers should be alert to the possibilities of complex and discriminable associations between variations among jobs and variations in the stress experience. Even slight

changes in stimulus conditions may produce differential effects. Clearly, however, our ability to tap such effects is contingent upon the development of scales which capture the multi-dimensional nature of job-related stress.

Finally, it is necessary to examine not only those situations and relationships that contribute to stress, but techniques or strategies useful in coping with them. Current literature and the responses from over 1,000 administrators in this study clearly indicate that individuals use different strategies. While the techniques reported reflect the individualistic nature of coping, the three general categories derived from the content analysis provides evidence of the general categories within which people typically find their release from pressure. The physical activity, mental control and management skill development areas represent rubrics under which individuals have found effective ways of coping.

The notion of individual specific techniques should not be lost under the three categories. These categories possibly represent a healthy coping response pattern which people should keep in balance by calling upon specific techniques within each. Again we are reminded of research conclusions indicating that those individuals who cope best have a variety of techniques to use. It is not the educator who masters one technique that copes best, but the one who possesses the flexibility to call upon a number of techniques from a variety of sources--mental control, physical activity and skill development.

In examining specific coping techniques it must be remembered, as with stressors, the individual involved is the most important variable. Two general guidelines might be kept in mind when studying coping

techniques. First, coping skills are complex and need to be flexible. It would be a gross oversimplification to suggest that any one specific technique would be successful in all situations. A second guideline to consider is that techniques must be sensitive to individual differences, both culturally and environmentally. If stress is the reaction between an individual's personality and his/her environment, then certainly coping with stress also closely approximates the same process.

In conclusion, no amount of research can provide the single answer for all administrators. A crucial step, none-the-less, is to make the sources of stress visible and identify effective ways of coping with these pressures. We believe the present study has begun to serve these purposes.

Varimax Rotated Factor Matrix on Validation Sample
(n = 578)

Items[1]	Factor 1	Factor 2	Factor 3	Factor 4
Role-Based Stress				
*Knowing I can't get information needed to carry out my job properly	.40	.08	.13	-.05
*Thinking that I will not be able to satisfy the conflicting demands of those who have authority over me	.58	.04	.17	.07
-Trying to resolve differences with my superiors	.63	.06	.05	.08
*Not knowing what my supervisor thinks of me, or how he/she evaluates my performance	.61	.04	.06	.02
*Feeling that I have too little authority to carry out responsibilities assigned to me	.67	.09	.06	.01
*Being unclear on just what the scope and responsibilities of my job are	.62	.07	.16	.05
*Trying to influence my immediate supervisor's actions and decisions that affect me	.63	.09	.13	.07
Task-Based Stress				
-Being interrupted frequently by telephone calls	.03	.47	-.02	.06
-Supervising and coordinating the tasks of many people	.19	.40	.16	.20
-Having my work frequently interrupted by staff members who want to talk	.01	.42	.03	.19
-Imposing excessively high expectations on myself	.19	.44	.08	.08
-Writing memos, letters and other communications	.12	.33	.14	.22
-Feeling I have to participate in school activities outside of the normal working hours at the expense of my personal time	.29	.35	.21	.05
*Feeling I have too much responsibility delegated to me by my supervisor	.24	.48	-.03	.09
*Feeling that I have too heavy a work load, one that I cannot possibly finish during the normal workday	.09	.70	.17	-.03
-Feeling that meetings take up too much time	.16	.38	.25	.05
-Trying to complete reports and other paper work on time	.05	.54	.37	-.01
Boundary Spanning Stress				
-Preparing and allocating budget resources	.12	.22	.43	.09
-Being involved in the collective bargaining process	.00	-.01	.60	.05
-Complying with state, federal, and organizational rules and policies	.02	.21	.54	.04
-Administering the negotiated contract (grievance, interpretations, etc.)	.13	.07	.65	.15
-Trying to gain public approval and/or financial support for school programs	.13	.07	.51	.03
Conflict-Mediating Stress				
-Trying to resolve differences between/among students	-.01	.01	.15	.86
-Trying to resolve parent/school conflicts	.09	.25	.16	.56
-Handling student discipline problems	.00	.02	.15	.80
Summary Statistics				
Eigenvalue	4.58	1.97	1.43	1.10
% of Common Variance	50.4	21.8	15.8	12.1

[1] JRS items are designated by an asterisk. Others, developed in the present study, are designated by a hyphen.

Varimax Rotated Factor Matrix on Cross-Validation Sample
(n = 578)

Items[1]	Factor 1	Factor 2	Factor 3	Factor 4
Role-Based Stress				
*Knowing I can't get information needed to carry out my job properly	.37	.02	.25	.09
*Thinking that I will not be able to satisfy the conflicting demands of those who have authority over me	.65	.06	.17	.13
-Trying to resolve differences with my superiors	.63	.02	.05	.10
*Not knowing what my supervisor thinks of me, or how he/she evaluates my performance	.70	.01	.00	.10
*Feeling that I have too little authority to carry out responsibilities assigned to me	.61	.06	.17	.16
*Being unclear on just what the scope and responsibilities of my job are	.66	.02	.17	.16
*Trying to influence my immediate supervisor's actions and decisions that affect me	.72	.04	.08	.00
Task-Based Stress				
-Being interrupted frequently by telephone calls	.05	.45	.11	.03
-Supervising and coordinating the tasks of many people	.14	.41	.23	.07
-Having my work frequently interrupted by staff members who want to talk	.02	.51	.07	.02
-Imposing excessively high expectations on myself	.23	.41	-.05	.15
-Writing memos, letters and other communications	.07	.35	.13	.12
-Feeling I have to participate in school activities outside of the normal working hours at the expense of my personal time	.36	.31	.15	.22
*Feeling I have too much responsibility delegated to me by my supervisor	.38	.43	.21	.07
*Feeling that I have too heavy a work load, one that I cannot possibly finish during the normal workday	.17	.71	.08	.08
-Feeling that meetings take up too much time	.14	.42	-.03	.21
-Trying to complete reports and other paper work on time	.11	.59	.16	.26
Conflict-Mediating Stress				
-Trying to resolve differences between/among students	.05	.11	.78	.05
-Trying to resolve parent/school conflicts	.03	.25	.61	.23
-Handling student discipline problems	.03	.08	.88	.10
Boundary Spanning Stress				
-Preparing and allocating budget resources	.11	.09	.27	.45
-Being involved in the collective bargaining process	.06	.08	.02	.63
-Complying with state, federal, and organizational rules and policies	.08	.02	.33	.46
-Administering the negotiated contract (grievance, interpretation, etc.)	.07	.08	.05	.62
-Trying to gain public approval and/or financial support for school programs	.16	.06	.12	.48
Summary Statistics				
Eigenvalue	5.11	2.03	1.36	1.1
% of Common Variance	53.1	21.1	14.2	11.6

[1] JMS items are designated by an asterisk. Others, developed in the present study, are desig-

Table 4

Varimax Rotated Factor Matrix on Cross-Validation Sample
(n = 578)

Items[1]	Factor 1	Factor 2	Factor 3	Factor 4
Role-Based Stress				
*Knowing I can't get information needed to carry out my job properly	.37	.02	.25	.09
*Thinking that I will not be able to satisfy the conflicting demands of those who have authority over me	.65	.06	.17	.13
-Trying to resolve differences with my superiors	.63	.02	.05	.10
*Not knowing what my supervisor thinks of me, or how he/she evaluates my performance	.70	.01	.00	.10
*Feeling that I have too little authority to carry out responsibilities assigned to me	.61	.06	.17	.16
*Being unclear on just what the scope and responsibilities of my job are	.66	.02	.17	.16
*Trying to influence my immediate supervisor's actions and decisions that affect me	.72	.04	.08	.00
Task-Based Stress				
-Being interrupted frequently by telephone calls	.05	.45	.11	.03
-Supervising and coordinating the tasks of many people	.14	.41	.23	.07
-Having my work frequently interrupted by staff members who want to talk	.02	.51	.07	.02
-Imposing excessively high expectations on myself	.23	.41	-.05	.15
-Writing memos, letters and other communications	.07	.35	.13	.12
-Feeling I have to participate in school activities outside of the normal working hours at the expense of my personal time	.36	.31	.15	.22
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-Feeling that meetings take up too much time	.14	.42	-.03	.21
-Trying to complete reports and other paper work on time	.11	.59	.16	.26
Conflict-Mediating Stress				
-Trying to resolve differences between/among students	.05	.11	.78	.05
-Trying to resolve parent/school conflicts	.03	.25	.61	.23
-Handling student discipline problems	.03	.08	.88	.10
Boundary Spanning Stress				
-Preparing and allocating budget resources	.11	.09	.27	.45
-Being involved in the collective bargaining process	.06	.08	.02	.63
-Complying with state, federal, and organizational rules and policies	.08	.02	.33	.46
-Administering the negotiated contract (grievance, interpretation, etc.)	.07	.08	.05	.62
-Trying to gain public approval and/or financial support for school programs	.16	.06	.12	.48
Summary Statistics				
Eigenvalue	5.11	2.03	1.36	1.1
% of Common Variance	53.1	21.1	14.2	11.6

[1] JMS items are designated by an asterisk. Others, developed in the present study, are desig-

TABLE 3

VALIDATION SAMPLE
Coefficient Alphas, Factor Correlations, Median
Within and Between Item Correlations
(n = 578)

Analysis[1]	Factor 1	Factor 2	Factor 3	Factor 4
Factor Matrix				
Factor 1	(.80)			
Factor 2	.36	(.80)		
Factor 3	.12	.32	(.77)	
Factor 4	.24	.35	.21	(.70)
Median Item Correlations				
- Within	.40	.52	.24	.33
- Between	.13	.16	.11	.15

[1]Coefficient alphas are indicated in the diagonal of the Factor Matrix

CROSS-VALIDATION SAMPLE
Coefficient Alphas, Factor Correlations, Median
Within and Between Item Correlations
(n = 578)

Analysis[1]	Factor 1	Factor 2	Factor 3	Factor 4
Factor Matrix				
Factor 1	(.83)			
Factor 2	.38	(.82)		
Factor 3	.13	.30	(.78)	
Factor 4	.22	.37	.23	(.70)
Median Item Correlations				
- Within	.37	.50	.25	.33
- Between	.14	.16	.12	.16

[1]Coefficient alphas are indicated in the diagonal of the Factor Matrix

TABLE 4

Means and Analysis of Variance Results
for Age, Administrative Experience and Position in Organization

Variable	Factor 1 (Role)	Factor 2 (Task)	Factor 3 (Boundary)	Factor 4 (Conflict)
Age				
Less than 40 (n = 256)	2.11	2.64	2.24	2.32
40-49 (n = 507)	2.11	2.54	2.40	2.30
50+ (n = 403)	2.09	2.47	2.54	2.13
F-ratio	.09	4.90**	9.56***	1.77
Administrative Experience				
1-5 years (n = 264)	2.07	2.55	2.14	2.42
6-15 years (n = 528)	2.12	2.59	2.42	2.28
16+ years (n = 364)	2.08	2.46	2.61	2.10
F-ratio	.39	4.39**	22.98***	6.26**
Position				
Principal (n = 583)	2.12	2.57	2.55	2.66
Superintendent (N = 204)	1.85	2.42	3.10	1.68
F-ratio	11.13***	4.02*	44.39***	105.77***

* $p < .05$

** $p < .01$

*** $p < .001$

TABLE 5

Means and Analysis of Variance Results for Current Physical Health

Variable	Factor 1 (Role)	Factor 2 (Task)	Factor 3 (Boundary)	Factor 4 (Conflict)
Current Physical Health				
Poor-Average (n = 234)	2.26	2.74	2.63	2.44
Good (n = 474)	2.14	2.59	2.44	2.33
Excellent (n = 448)	1.96	2.38	2.26	2.07
F-ratio	12.17***	23.35***	14.19***	10.59***

*** $p < .001$

Notes

1. One of the more widely used measures is the Index of Job Related Strain (JRS) developed by Indik, Seashore and Slesinger (1964). The JRS was tested on a sample of 8,234 industrial employees representing diverse age, educational and occupational backgrounds. Even though Indik et al (1964, p. 28) recognized the multi-dimensionality of the construct, their empirical analysis of the JRS indicates that this index was only able to tap one underlying source of occupational stress. Burke and Belcourt (1974) later did a factor analysis of 14 of the 15 items comprising the JRS Index. While their orthogonal rotation identified two principal role-related stress dimensions (ambiguity and overload), it still suggested important limitations in the JRS as an instrument for tapping the theoretically diverse nature of occupational stress as it occurs within organizations.

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